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## Observations of Hind's second comet (1847, Feb. 6), by Mr. Bishop and Mr. Hind.

"This comet was detected about 9 o'clock on the evening of February 6, with the large refractor. At the time of discovery it was excessively faint, without nucleus, and scarcely presenting the central condensation which is usual in telescopic comets. The observations from February 6 to 10, inclusive, are uncertain, owing to the absence of any definite point for observation, and the faintness of the comet. On February 15 it had become much brighter, and a nucleus was perceptible at intervals. On the 19th the nucleus was more distinct, but was not quite central, being rather on the side following in R.A.: the comet, therefore, seemed to have a short tail. On the 23d the nucleus was still eccentrically placed: the comet bore illumination, notwithstanding the strong moonlight. On the 26th appearances were much the same. Next evening the nucleus was thought to be nearer the centre of the nebulosity than before; it shone as a star of the 11-12th magnitude. The central nebulosity surrounding the nucleus was very much condensed. On March 3 the comet was not so well seen, owing to its low situation after the sky had cleared, and to the haze prevalent in the north: the eccentrically situated nucleus was visible by glimpses. Cloudy weather prevented any further observations till March 9, when the comet was distinctly seen in strong twilight. Later in the evening it was very bright, exhibiting a decided nucleus, with a tail 1° in length, which appeared as a narrow ray of light proceeding directly from the centre of the comet, there being nothing resembling an envelope. The comet was visible here in a small opera-glass, and would probably be seen with the naked eye at a short distance from London, where the air was very misty.

"On the first few evenings after the discovery of the comet, the weather was so unfavourable that we were obliged to content ourselves with instrumental positions. Several stars, subsequently compared with the comet by means of the wire-micrometer, have not been found in any catalogue; and we therefore reserve the communication of the *whole* series of observations until a future meeting. In the mean time, the following observations may be useful for the determination of the orbit:—

"*Approximate* places deduced from instrumental comparisons.

| | Greenwich M.T. | R.A. | Dec. |
|---|---|---|---|
| | h m s | ° ′ ″ | ° ′ |
| Feb. 6 | 9 16 58 | 317 17 27 | +71 26 21 |
| | 10 50 39 | 317 25 38 | +71 24 22 |
| 7 | 13 10 5 | 319 47 22 | +70 47 46 |
| 8 | 11 22 28 | 321 44 55:: | +70 15 43 |
| 9 | 12 7 0 | 323 46 18 | +69 37 46 |
| 10 | 8 57 24 | 325 25 25 | +69 5 49 |

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"Apparent positions resulting from the micrometric observations.

| | Greenwich M.T. | R.A. | Dec. | |
|---|---|---|---|---|
| | h m s | ° ′ ″ | ° ′ ″ | |
| Feb. 11 | 8 14 33 | 327 13 25·4 | +68 28 28·1 | |
| 15 | 8 2 25 | 333 55 33·4 | +65 41 29·4 | |
| 16 | 14 50 55 | 335 53 30·6 | +64 43 54·0 | |
| 19 | 7 43 8 | 339 41 16·8 | +62 36 18·4 | |
| 23 | 13 57 40 | 344 59 27·6 | +58 57 51·2 | Very good. |
| 24 | 8 5 39 | 345 51 21·6 | +58 16 43·7 | |
| 26 | 7 44 16 | 348 0 32·9 | +56 25 43·7 | Very good. |
| 27 | 7 32 14 | 349 2 1·4 | +55 28 22·6 | Very good. |
| Mar. 3 | 10 11 19 | 352 57 46·2 | +51 15 39·8 | Pretty good. |
| 9 | 7 6 37 | 357 45 24·2 | +44 26 15·2 | Excellent. |

"The places of the comparison stars have been taken generally from Argelander's zones."

### Berlin. (Professor Encke.)

| | Berlin M.T. | R.A. | Dec. |
|---|---|---|---|
| | h m s | ° ′ ″ | ° ′ ″ |
| 1847. Feb. 22 | 11 56 9·0 | 343 40 12·3 | +59 57 42·6 |
| 27 | 7 38 46·0 | 349 0 7·9 | +55 31 11·2 |

### Hamburg. Equatoreal. (M. Rümker.)

| | Hamburg M.T. | R.A. | Dec. | Comparisons. |
|---|---|---|---|---|
| | h m s | ° ′ ″ | ° ′ ″ | |
| 1847. Feb. 21 | 15 9 57 | 342 37 23·7 | +60 41 54·5 | 4 |
| 22 | 7 41 27·4 | 343 28 16·5 | 60 6 36·0 | 1 |
| | 10 24 40·6 | 343 36 25·3 | 60 0 9·0 | 8 |
| 23 | 7 40 1·5 | 344 39 15·0 | 59 13 16·2 | 14 |
| 24 | 6 51 45·2 | 345 45 18·3 | 58 21 26·7 | 4 |
| | 15 25 43·2 | 346 9 35·0 | 58 1 51·8 | 1 |
| | 17 38 53·7 | 346 16 0·0 | 57 56 31·0 | 4 |

In an additional note, Mr. Hind remarks :—

"The elements of the comet deduced from the observations made at the South Villa Observatory are approximately as follows :—

Perihelion Passage, 1847, March, 30·269, Greenwich Mean Time.

| | ° ′ |
|---|---|
| Longitude of Perihelion ...... | 275 8 |
| Ascending Node .............. | 20 28 |
| Inclination..................... ... | 48 40 |

Log. least Distance, 8·6507. Motion direct.

"Now, assuming that the intensity of light varies as $\frac{1}{r^2\,\Delta^2}$ (where $r$ is the comet's radius vector, and $\Delta$ its true distance from the earth), it appears that the comet will be 230 times brighter about the time of perihelion than on March 9, when it was just perceptible to the naked eye. It may therefore be worth while to examine the heavens in the day-time about March 30, there being at least a probability that, with the aid of telescopes, we may see the comet at that time. The very close approach of the comet to the sun is likely to produce a tail of considerable length; and those observers who take an interest in cometary astronomy will do well to keep a close watch on the horizon, as it appears by no means improbable that this appendage may be detected in the twilight, after the perihelion passage."

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## Exact Elements of Hind's second comet from the South Villa observations of Feb. 8 and 15, and the Berlin place for Feb. 22. By Dr. Brünnow.

Perihelion Passage 1847, March 30·31407, Berlin M.T.

| | ° | ′ | ″ |
|---|---|---|---|
| Longitude of Perihelion .................. | 274 | 25 | 42·9 |
| Longitude of Ascending Node .......... | 19 | 49 | 9 |
| Inclination ............... .................. | 48 | 38 | 20·5 |
| Log. least distance .......................... | 8·672159 | | |

Motion Direct.

## Occultations of Fixed Stars observed at Hamburg, by M. Rümker.

| Hamburg M.T. | | | Immersion. h | m | s | Emersion. h | m | s |
|---|---|---|---|---|---|---|---|---|
| 1845. | Aug. 14 | B. A. C. 6536 | 8 | 40 | 31·4 | | | |
| | 20 | δ Piscium | 9 | 9 | 37·8 | 10 | 7 | 20·3 |
| | Sept. 13 | ξ Aquarii | 9 | 22 | 56·1 | | | |
| | Nov. 6 | ν Aquarii | 7 | 42 | 6·5 | 8 | 3 | 2·3 |
| | Dec. 17 | α¹ Cancri | 8 | 47 | 15·0 | 9 | 30 | 22·4 |
| 1846. | July 5 | ν Scorpii | 11 | 45 | 11·3 | | | |
| | Sept. 1 | ρ¹ Sagittarii | 10 | 9 | 9·6 | | | |
| | Oct. 11 | λ Geminor. | | | | 12 | 26 | 0·9 |
| | Nov. 23 | β² Capricor. | 6 | 32 | 17·8 | | | |
| | Dec. 3 | 119 Tauri | | | | 6 | 31 | 14·2 |
| | 24 | 21 Piscium | 7 | 25 | 11·1 | | | |
| | 29 | δ¹ Tauri | 7 | 50 | 19·7 | 8 | 38 | 57·7 |
| | | δ³ Tauri | 9 | 14 | 43·9 | | | |
| 1847. | Feb. 25 | k Geminor. | 10 | 27 | 55·3 | | | |

## Sweeping Ephemeris for the comet of 1556, by Mr. Boreham.

The following ephemeris is computed on Halley's elements as given by Santini, and assuming a period of 291·76 years. The hypothetical times of perihelion passage are May 15, June 15, and July 12, of the current year.

| Per. Pass. May 15. | R.A. h | m | Dec. ° | ′ |
|---|---|---|---|---|
| April 8 | 6 | 2 | +13 | 24 |
| 15 | 5 | 28 | +12 | 8 |
| May 7 | 4 | 27 | 10 | 9 |

| Per. Pass. June 15. | R.A. h | m | Dec. ° | ′ |
|---|---|---|---|---|
| April 10 | 10 | 33 | +22 | 12 |
| 16 | 9 | 24 | 22 | 39 |
| May 9 | 7 | 8 | 17 | 12 |
| 16 | 6 | 49 | 15 | 58 |

| Per. Pass. July 12. | R.A. h | m | Dec. ° | ′ |
|---|---|---|---|---|
| April 14 | 12 | 9 | +20 | 23 |
| May 7 | 9 | 32 | 21 | 55 |
| 13 | 9 | 6 | 20 | 50 |

## On some Discrepancies in observing an Emersion of *Jupiter's* First Satellite, by Mr. Riddle.

The Emersion of the First Satellite was observed on Jan. 12, by four observers with telescopes A, B, C, D.

| | | Ft. | In. | Inches. |
|---|---|---|---|---|
| A | Munich Glass | 8 | 6 focus | 6·4 aperture |
| B | Cauchoix | 8 | 2 | 6·7 |
| C | Dollond, Sen. | 3 | 8 | 2·75 |
| D | Simms | 4 | 0 | 3·25 |

All are mounted equatorially, and the observers well practised.